PALM Intranet

Application Number [ ] SEARCH

IDS Flag Clearance for Application 10807105

IDS Information

Content	Mailroom Date	Entry Number	IDS Review	Reviewer
M844	05-28-2004	13	☑	08-11-2005 00:40:14 IDS CONV

UPDATE

Refine Search

Search Results -

Term	Documents
ELASTIC	814443
ELASTICS	3224
LAYER	3486873
LAYERS	1409390
(26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15
(L26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L27

Refine Search

Recall Text | Clear | Interrupt

Search History

DATE: Tuesday, September 20, 2005 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ			
L27	L26 and (elastic adj layer)	15	L27
L26	L25 and (Asker-C adj hardness)	19	L26
L25	(conductive adj roller)	3264	L25
L24	(ion adj conductive adj roller)	3	L24
L23	L3 and (ion adj conductive adj roller)	3	L23
L22	L20 and (asker-C adj hardness)	15	L22
L21	L20 and (asker-C)	23	L21

L20	L19 and (hardness)	143	L20
L19	L3 and (elastic adj layer)	246	L19
DB=USPT; PLUR=YES; OP=ADJ			
L18	6335133.pn.	1	L18
L17	6335133.pn.	1	L17
L16	6337165.pn.	1	L16
L15	6337165.pn.	1	L15
L14	6562530.pn.	1	L14
L13	6562530.pn.	1	L13
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ			
L12	L9 and (Asker-C adj hardness)	15	L12
L11	L9 and hardness	114	L11
L10	L9 and hard$4	138	L10
L9	L7 and (elastic adj layer)	191	L9
L8	L7 and (elastic)	403	L8
L7	L3 and (photosensitive)	757	L7
L6	L1 and (electrophotograpgic)	2	L6
L5	L3 and (electrophotograpgic)	0	L5
L4	L3 and (electrophotograpgic)	0	L4
L3	L2 and (conductive adj roller)	1357	L3
L2	(printer or (copy$4 adj machine) or (facsimile$4 adj machine))	652404	L2
L1	(image adj forming adj (apparatus or machine))	81041	L1

END OF SEARCH HISTORY

Hit List

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 15 of 15 returned.

☐ 1. Document ID: US 20040228659 A1 Relevance Rank: 81

Using default format because multiple data bases are involved.

L27: Entry 3 of 15 File: PGPB Nov 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040228659
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040228659 A1

TITLE: Ion conductive roller and image forming apparatus employing ion conductive roller

PUBLICATION-DATE: November 18, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nishida, Satoshi	Numazu-shi		JP	

US-CL-CURRENT: 399/176; 399/313

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 2. Document ID: US 20050026062 A1 Relevance Rank: 77

L27: Entry 2 of 15 File: PGPB Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050026062
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050026062 A1

TITLE: Non-magnetic toner

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Komoto, Keiji	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Moriki, Yuji	Shizuoka		JP	
Katsuta, Yasushi	Shizuoka		JP	

Nakayama, Kenichi	Shizuoka	JP
Kaburagi, Takeshi	Shizuoka	JP
Tosaka, Emi	Shizuoka	JP
Hashimoto, Yasuhiro	Shizuoka	JP

APPL-NO: 10/ 764531 [PALM]
DATE FILED: January 27, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-203040	2003JP-2003-203040	July 29, 2003

INT-CL: [07] G03 G 9/08

US-CL-PUBLISHED: 430/108.5; 430/108.6, 430/110.3
US-CL-CURRENT: 430/108.5; 430/108.6, 430/110.3

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

In a non-magnetic toner having non-magnetic toner particles containing at least a binder resin and a colorant, and an inorganic fine powder, the non-magnetic toner particles contain at least one ether compound having a specific structure, and the ether compound is in a content of from 5 ppm to 1,000 ppm.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 3. Document ID: US 6635398 B1 Relevance Rank: 72

L27: Entry 13 of 15 File: USPT Oct 21, 2003

US-PAT-NO: 6635398
DOCUMENT-IDENTIFIER: US 6635398 B1

TITLE: Dry toner, dry toner production process, and image forming method

DATE-ISSUED: October 21, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komoto; Keiji	Numazu			JP
Kukimoto; Tsutomu	Yokohama			JP
Chiba; Tatsuhiko	Kamakura			JP
Hashimoto; Akira	Mishima			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE

Canon Kabushiki Kaisha Tokyo JP 03

APPL-NO: 09/ 695079 [PALM]
DATE FILED: October 25, 2000

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	11-304680	October 26, 1999
JP	2000-320708	October 20, 2000
JP	2000-320709	October 20, 2000

INT-CL: [07] G03 G 9/087, G03 G 9/097

US-CL-ISSUED: 430/108.23; 430/109.3, 430/110.3, 430/111.4, 430/124, 430/125
US-CL-CURRENT: 430/108.23; 430/109.3, 430/110.3, 430/111.4, 430/124, 430/125

FIELD-OF-SEARCH: 430/109.3, 430/110.3, 430/111.4, 430/108.23, 430/124, 430/125, 430/126, 430/101, 430/120

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
2297691	October 1942	Carlson	
3269626	August 1966	Albrecht	266/177
3788994	January 1974	Wellman et al.	252/62.1
4533617	August 1985	Inoue et al.	
4657837	April 1987	Morita et al.	
4664504	May 1987	Oda et al.	355/15
4769676	September 1988	Mukai et al.	355/15
5166028	November 1992	Paine et al.	
5282007	January 1994	Oshiumi	355/296
5312704	May 1994	Fuller et al.	430/45
5514763	May 1996	Kmiecik-Lawrynowicz et al.	536/340
5571653	November 1996	Kasuya et al.	430/109.3
5721433	February 1998	Kosaka	250/573

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0529927	March 1993	EP	
0757294	February 1997	EP	
1414159	November 1975	GB	
1477504	June 1977	GB	
42-23910	November 1967	JP	
43-24748	October 1968	JP	
44-9880	May 1969	JP	

46-15876	April 1971	JP
48-75032	October 1973	JP
50-44836	April 1975	JP
48-75032	October 1977	JP
56-13945	April 1981	JP
57-493	January 1982	JP
57-37353	March 1982	JP
58-205162	November 1983	JP
58-205163	November 1983	JP
59-061842	April 1984	JP
59-133573	July 1984	JP
61-56352	March 1986	JP
62-203182	September 1987	JP
63-128357	May 1988	JP
63-128358	May 1988	JP
63-128359	May 1988	JP
63-128360	May 1988	JP
63-128361	May 1988	JP
63-128362	May 1988	JP
63-133179	June 1988	JP
63-281168	November 1988	JP
1-20587	January 1989	JP
2-302772	December 1990	JP
4-184358	July 1992	JP
4-276762	October 1992	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
6-242631	September 1994	JP
7-271096	October 1995	JP
7-301947	November 1995	JP
8-136439	May 1996	JP
8-262795	October 1996	JP
8-286416	November 1996	JP
9-265209	October 1997	JP
10-319628	December 1998	JP
11-160909	June 1999	JP

OTHER PUBLICATIONS

Japanese Patent Office Partial Machine-Assisted Translation of JP 10-319628 (Pub 12/98), Including Abstract, Claims, Paragraphs 0001-0092 and 0182-0229.*
Lee, et al., "The Glass Transition Temperatures of Polymers", Polymer Handbook, 2nd Ed., by Wiley--Interscience, pp. III-139 to III-192, (1971).
Japanese Industrial Standard JIS-B-0601 (1982), Ed. 7, Definitions and Designation of Surface Roughness, Translation pp. 1-12, (1983).

ART-UNIT: 1756

PRIMARY-EXAMINER: Dote; Janis L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

A dry toner has toner particles containing at least a binder resin, a colorant and a wax component and an external additive. The binder resin contains a component derived from a monomer selected from butadiene, isoprene and chloroprene. The toner has a main Tg from 40.degree. C. to 70.degree. C. When specific surface area measured by the BET method in an environment of 23.degree. C. atmospheric temperature and 65% relative humidity is represented by A (m.sup.2 /g) and specific surface area measured by the BET method in an environment of 50.degree. C. atmospheric temperature and 3% relative humidity is represented by B (m.sup.2 /g), the toner satisfies the following relationship: 0.8.ltoreq.A.ltoreq.4.0, 0.80.ltoreq.(B/A).ltoreq.1.05. The toner has a circle-corresponding number-average particle diameter D1 from 2 to 10 .mu.m, an average circularity from 0.950 to 0.995 and a circularity standard deviation less than 0.040. The toner has a main-peak molecular weight from 2,000 to 100,000 and contains a THF-insoluble matter from 5 to 60% by weight.

31 Claims, 9 Drawing figures

☐ 4. Document ID: US 20040191665 A1 Relevance Rank: 54

L27: Entry 4 of 15 File: PGPB Sep 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040191665
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040191665 A1

TITLE: Method for forming an image

PUBLICATION-DATE: September 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Watanabe, Shuntaro	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Yamamoto, Takeshi	Kanagawa		JP	
Yachi, Shinya	Shizuoka		JP	
Nonaka, Katsuyuki	Ibaraki		JP	

APPL-NO: 10/ 753058 [PALM]
DATE FILED: January 7, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-002076(PAT.	2003JP-2003-002076(PAT.	January 8, 2003

INT-CL: [07] G03 G 15/20

US-CL-PUBLISHED: 430/124; 430/111.41, 399/279, 399/286
US-CL-CURRENT: 430/124; 399/279, 399/286, 430/111.41

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

To provide an method for forming an image capable of effectively suppressing a toner from deteriorating and also capable of keeping the quality of an image for a long period of time, even when the method is applied to an apparatus with as high process speed. The present invention provides an method for forming an image, in which a developing unit is used, which includes: a rotatable cylindrical toner bearing member having a diameter represented as Rd (mm); and a rotatable cylindrical toner-supplying member having a diameter Rs (mm), the diameters Rd and Rs satisfying the following relational expression (1):

1.ltoreq.Rs-Rd.ltoreq.10 (1)

and in which the nonmagnetic one-component toner having an degree of aggregation of 5 to 30% and an electric resistivity of 1.times.10.sup.14 to 1.times.10.sup.18 .OMEGA..multidot.cm at an electric field of 1.times.10.sup.4 V/cm is used.

☐ 5. Document ID: US 6806009 B2 Relevance Rank: 53

L27: Entry 12 of 15 File: USPT Oct 19, 2004

US-PAT-NO: 6806009
DOCUMENT-IDENTIFIER: US 6806009 B2
**** See image for Certificate of Correction ****

TITLE: Electrophotographic photosensitive member, process cartridge and electrophotographic apparatus

DATE-ISSUED: October 19, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tanaka; Daisuke	Shizuoka			JP
Morikawa; Yosuke	Kanagawa			JP
Ikezue; Tatsuya	Kanagawa			JP
Nakata; Kouichi	Shizuoka			JP
Yoshimura; Kimihiro	Kanagawa			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE

Canon Kabushiki Kaisha Tokyo JP 03

APPL-NO: 10/ 314354 [PALM]
DATE FILED: December 9, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2001-389242	December 21, 2001

INT-CL: [07] G03 G 5/147

US-CL-ISSUED: 430/66; 430/59.6, 430/58.65, 430/58.8, 399/159
US-CL-CURRENT: 430/66; 399/159, 430/58.65, 430/58.8, 430/59.6

FIELD-OF-SEARCH: 430/66, 430/58.05, 430/59.6, 430/58.65, 430/58.8, 399/159

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4880717	November 1989	Kitagawa et al.	430/58
5008172	April 1991	Rokutanzono et al.	430/67
6335133	January 2002	Nagasaka	430/64
6337165	January 2002	Fujii et al.	430/58.05
6562530	May 2003	Morikawa et al.	430/66
2001/0036585	November 2001	Komatsu et al.	430/100
2002/0045116	April 2002	Morikawa et al.	430/66

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2351118 A14	December 2001	CA	
01041449	October 2000	EP	
1172701	January 2002	EP	
57030846	February 1982	JP	
62295066	December 1987	JP	
1306857	December 1989	JP	
2050167	February 1990	JP	
5181299	July 1993	JP	
6082223	March 1994	JP	
10228126	August 1998	JP	
10228127	August 1998	JP	

ART-UNIT: 1756

PRIMARY-EXAMINER: Goodrow; John L

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

In an electrophotographic photosensitive member comprising a cylindrical support, and provided thereon a photosensitive layer and a protective layer in this order, which cylindrical support has an outer diameter of less than 30 mm, the difference between a coefficient of thermal expansion .alpha..sub.1 measured from the top of the protective layer and a coefficient of thermal expansion .alpha..sub.2 measured after the protective layer has been removed, .vertline..alpha..sub.1 - .alpha..sub.2.vertline., is more than 5.0.times.10.sup.-7.degree. C..sup.-1 to less than 1.0.times.10.sup.-4.degree. C..sup.-1, and the modulus of elastic deformation We % measured from the top of the protective layer is more than 30% to less than 60%. Also disclosed are a process cartridge and an electrophotographic apparatus which have such an electrophotographic photosensitive member.

27 Claims, 6 Drawing figures

☐ 6. Document ID: US 20030194625 A1 Relevance Rank: 53

L27: Entry 6 of 15 File: PGPB Oct 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030194625
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030194625 A1

TITLE: Electrophotographic photosensitive member, process cartridge and electrophotographic apparatus

PUBLICATION-DATE: October 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Tanaka, Daisuke	Shizuoka		JP	
Morikawa, Yosuke	Kanagawa		JP	
Ikezue, Tatsuya	Kanagawa		JP	
Nakata, Kouichi	Shizuoka		JP	
Yoshimura, Kimihiro	Kanagawa		JP	

APPL-NO: 10/ 314354 [PALM]
DATE FILED: December 9, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	389242/100	2001JP-389242/100	December 21, 2001

INT-CL: [07] G03 G 5/147

US-CL-PUBLISHED: 430/58.8; 430/66, 430/58.05, 430/59.6, 430/58.65, 399/159
US-CL-CURRENT: 430/58.8; 399/159, 430/58.05, 430/58.65, 430/59.6, 430/66

REPRESENTATIVE-FIGURES: 1A

ABSTRACT:

In an electrophotographic photosensitive member comprising a cylindrical support, and provided thereon a photosensitive layer and a protective layer in this order, which cylindrical support has an outer diameter of less than 30 mm, the difference between a coefficient of thermal expansion .alpha..sub.1 measured from the top of the protective layer and a coefficient of thermal expansion .alpha..sub.2 measured after the protective layer has been removed, .vertline..alpha..sub.1-.alpha..sub.2.- vertline., is more than 5.0.times.10.sup.-7.degree. C..sup.-1 to less than 1.0.times.10.sup.-4.degree. C..sup.-1, and the modulus of elastic deformation We % measured from the top of the protective layer is more than 30% to less than 60%. Also disclosed are a process cartridge and an electrophotographic apparatus which have such an electrophotographic photosensitive member.

☐ 7. Document ID: US 20050026063 A1 Relevance Rank: 44

L27: Entry 1 of 15 File: PGPB Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050026063
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050026063 A1

TITLE: Toner

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Komoto, Keiji	Shizuoka		JP	
Katsuta, Yasushi	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Kaburagi, Takeshi	Shizuoka		JP	
Tosaka, Emi	Shizuoka		JP	

APPL-NO: 10/ 808401 [PALM]
DATE FILED: March 25, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-281761	2003JP-2003-281761	July 29, 2003
JP	2004-049917	2004JP-2004-049917	February 25, 2004

INT-CL: [07] G03 G 9/087

US-CL-PUBLISHED: 430/109.1; 430/108.6, 430/108.7, 430/137.15
US-CL-CURRENT: 430/109.1; 430/108.6, 430/108.7, 430/137.15

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A toner includes toner particles and an inorganic fine powder mixed with the toner particles. The toner particles contain a binder resin, a coloring agent, a releasing agent, and a sulfur-containing resin. The toner particles contain at least one element selected from the group consisting of magnesium, calcium, barium, zinc, aluminum, and phosphorus and satisfy the relationship:

4.ltoreq.T/S.ltoreq.30

wherein T represents the total content of the element in ppm, and S represents the content of sulfur in ppm. The weight-average particle diameter (D4) of the toner is in the range of 3 to 10 .mu.m. The average circularity of the toner is within the range of 0.950 to 0.995.

☐ 8. Document ID: US 20040038142 A1 Relevance Rank: 42

L27: Entry 5 of 15 File: PGPB Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040038142
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040038142 A1

TITLE: Developer, and image forming method and process cartridge using such developer

PUBLICATION-DATE: February 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Yoshida, Satoshi	Tokyo		JP	
Tanikawa, Hirohide	Shizuoka		JP	

APPL-NO: 10/ 158519 [PALM]
DATE FILED: May 30, 2002

INT-CL: [07] G03 G 9/097

US-CL-PUBLISHED: 430/108.6; 430/110.4, 430/108.1, 430/111.41, 430/108.3, 430/108.7, 430/126, 399/252, 430/122
US-CL-CURRENT: 430/108.6; 399/252, 430/108.1, 430/108.3, 430/108.7, 430/110.4, 430/111.41, 430/122, 430/126

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

A developer comprising toner particles containing at least a binder resin and a colorant, an inorganic fine powder whose primary particles have a number-average particle diameter of from 4 nm to 50 nm, and a conductive fine powder whose primary particles have a number-average particle diameter of from 50 nm to 500 nm. The conductive fine powder contains an agglomerated matter of the primary particles. The developer comprises 15% to 60% by number of particles having particle diameters in the range of from 1.00 .mu.m, inclusive, to 2.00 .mu.m, exclusive, and 15% to 70% by number of particles having particle diameters in the range of from 3.00 .mu.m, inclusive, to 8.96 .mu.m, exclusive, in number-based particle size distribution of particles having particle diameters in the range of from 0.60 .mu.m, inclusive, to 159.21 .mu.m, exclusive. Also, an image forming method and a process cartridge are disclosed which make use of the developer.

☐ 9. Document ID: US 20030175043 A1 Relevance Rank: 42

L27: Entry 7 of 15 File: PGPB Sep 18, 2003

PGPUB-DOCUMENT-NUMBER: 20030175043
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030175043 A1

TITLE: Process cartridge and developing-assembly unit

PUBLICATION-DATE: September 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Handa, Satoshi	Shizuoka		JP	
Kawakami, Hiroaki	Kanagawa		JP	
Moriki, Yuji	Shizuoka		JP	
Suzuki, Kiyokazu	Shizuoka		JP	
Hashimoto, Yasuhiro	Shizuoka		JP	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo		JP	03

APPL-NO: 10/ 340685 [PALM]
DATE FILED: January 13, 2003

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2002-008069	2002JP-2002-008069	January 16, 2002

INT-CL: [07] G03 G 15/08, G03 G 21/16

US-CL-PUBLISHED: 399/111; 399/252
US-CL-CURRENT: 399/111; 399/252

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

In a process cartridge having a latent-image-bearing member and a developing means having a developer-holding part and a developing member, at a vertical section which bisects in the process cartridge the surface of the latent-image-bearing member with which surface the developing member is brought into pressure contact, a developer agitation and transport member has at least two rotary agitation and transport means having rotating shafts falling at right angles with the vertical section. Where, at the vertical section, the area of the developer-holding part is represented by S1 and the area of the part corresponding to the movable region of the rotary agitation and transport means is represented by S2, the ratio of S2 to S1, S2/S1, is from 0.8 to 0.99; and the ratio of a long side Sa to a short side Sb, Sa/Sb, of a circumparallelogram having a minimum area in respect to the area S1 in the vertical section is from 1.5 to 3.0. The non-magnetic one-component developer contains at least a binder resin and a colorant and has a fluidity index of from 50 to 90 and a floodability index of from 45 to 96.

☐ 10. Document ID: US 6859633 B2 Relevance Rank: 42

L27: Entry 11 of 15 File: USPT Feb 22, 2005

US-PAT-NO: 6859633
DOCUMENT-IDENTIFIER: US 6859633 B2

TITLE: Integral-type process cartridge and developing-assembly unit including non-magnetic one-component toner

DATE-ISSUED: February 22, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Handa; Satoshi	Shizuoka			JP
Kawakami; Hiroaki	Kanagawa			JP
Moriki; Yuji	Shizuoka			JP
Suzuki; Kiyokazu	Shizuoka			JP
Hashimoto; Yasuhiro	Shizuoka			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 10/ 340685 [PALM]
DATE FILED: January 13, 2003

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2002-008069	January 16, 2002

INT-CL: [07] G03 G 15/04, G03 G 15/08

US-CL-ISSUED: 399/119; 399/252, 399/254
US-CL-CURRENT: 399/119; 399/252, 399/254

FIELD-OF-SEARCH: 399/111, 399/119, 399/222, 399/252, 399/254, 399/255, 399/256, 399/258, 399/262, 399/263, 399/284, 399/285, 430/105, 430/107.1, 430/108.1, 430/108.4, 430/109.1, 430/109.4, 430/110.1, 430/110.3, 430/110.4

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4777512	October 1988	Takahashi et al.	399/254 X
4987452	January 1991	Nakagawa et al.	399/254
5077583	December 1991	Bhagat	399/255
5701571	December 1997	Amamiya et al.	399/343
5826132	October 1998	Damji et al.	399/119 X
6051350	April 2000	Inaba et al.	430/45
6085051	July 2000	Miyasaka et al.	399/119 X
6287739	September 2001	Kawakami et al.	430/110.3 X
6289190	September 2001	Amamiya et al.	399/174
6301453	October 2001	Tsutsumi	399/285 X
6316157	November 2001	Yoshikawa et al.	430/108.3
6349182	February 2002	Otsubo et al.	399/12
6440630	August 2002	Isobe et al.	430/124
2001/0028816	October 2001	Kakeshita et al.	399/284 X

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2001-42625	February 2001	JP	

ART-UNIT: 2852

PRIMARY-EXAMINER: Brase; Sandra L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

In a process cartridge having a latent-image-bearing member and a developing device having a developer-holding part and a developing member, at a vertical section which bisects in the process cartridge the surface of the latent-image-bearing

member with which surface the developing member is brought into pressure contact, a developer agitation and transport member has at least two rotary agitation and transport members having rotating shafts falling at right angles with the vertical section. Where, at the vertical section, the area of the developer-holding part is represented by S1 and the area of the part corresponding to the movable region of the rotary agitation and transport member is represented by S2, the ratio of S2 to S1, S2/S1, is from 0.8 to 0.99; and the ratio of a long side Sa to a short side Sb, Sa/Sb, of a circumparallelogram having a minimum area in respect to the area S1 in the vertical section is from 1.5 to 3.0. The non-magnetic one-component developer contains at least a binder resin and a colorant and has a fluidity index of from 50 to 90 and a floodability index of from 45 to 96.

31 Claims, 10 Drawing figures

☐ 11. Document ID: US 6596452 B2 Relevance Rank: 42

L27: Entry 14 of 15 File: USPT Jul 22, 2003

US-PAT-NO: 6596452
DOCUMENT-IDENTIFIER: US 6596452 B2
**** See image for Certificate of Correction ****

TITLE: Magnetic toner and image-forming method making use of the same

DATE-ISSUED: July 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Magome; Michihisa	Shizuoka-ken			JP
Kukimoto; Tsutomu	Kanagawa-ken			JP
Takiguchi; Tsuyoshi	Kanagawa-ken			JP
Chiba; Tatsuhiko	Kamakura			JP
Hashimoto; Akira	Shizuoka-ken			JP
Komoto; Keiji	Shizuoka-ken			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 09/ 788399 [PALM]
DATE FILED: February 21, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2000-043671	February 21, 2000
JP	2000-086484	March 27, 2000
JP	2000-086486	March 27, 2000
JP	2000-399203	December 27, 2000

INT-CL: [07] G03 G 9/083, G03 G 9/087, G03 G 13/22

US-CL-ISSUED: 430/106.2; 430/109.3, 430/109.4, 430/110.3, 430/114.4, 430/111.41, 430/122, 430/125, 430/126, 430/902
US-CL-CURRENT: 430/106.2; 430/109.3, 430/109.4, 430/110.3, 430/111.41, 430/122, 430/125, 430/126, 430/902

FIELD-OF-SEARCH: 430/106.1, 430/106.2, 430/110.3, 430/108.23, 430/109.3, 430/109.4, 430/111.4, 430/111.41, 430/122, 430/125, 430/126, 430/902

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4530894	July 1985	Imamura et al.	
4620987	November 1986	Yamashita et al.	427/131
4769676	September 1988	Mukai et al.	355/15
4804609	February 1989	Imanaka et al.	
4820603	April 1989	Sakashita	
4843424	June 1989	Oda et al.	
4851960	July 1989	Nakamura et al.	
5014089	May 1991	Sakashita et al.	
5106815	April 1992	Akada et al.	503/229
5215845	June 1993	Yusa et al.	430/122
5282007	January 1994	Oshiumi	
5432037	July 1995	Nishikiori et al.	430/126
5450180	September 1995	Ohzeki et al.	
5480755	January 1996	Uchiyama et al.	
5508139	April 1996	Tanaka et al.	430/106.1
5669126	September 1997	Nagano et al.	29/25.35
5672454	September 1997	Sasaki et al.	
5948584	September 1999	Hashimoto et al.	
5976755	November 1999	Yoshida et al.	430/126
6077636	June 2000	Moriki et al.	430/45
6081681	June 2000	Nagase et al.	399/174
6128456	October 2000	Chigong et al.	399/176

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
1058157	December 2000	EP	
54-43027	April 1979	JP	
54-84731	July 1979	JP	
57-151952	September 1982	JP	
59-133573	July 1984	JP	
59-168458	September 1984	JP	
59-200254	November 1984	JP	

59-200256	November 1984	JP
59-200257	November 1984	JP
59-224102	December 1984	JP
60-69660	April 1985	JP
61-34070	February 1986	JP
61-141452	June 1986	JP
61-249059	November 1986	JP
61-275864	December 1986	JP
62-203182	September 1987	JP
62-258472	November 1987	JP
62-279352	December 1987	JP
63-133179	June 1988	JP
63-149669	June 1988	JP
63-235953	September 1988	JP
1-020587	January 1989	JP
1-112253	April 1989	JP
2/120865	May 1990	JP
2-123385	May 1990	JP
2-256064	October 1990	JP
2-302772	December 1990	JP
3-9045	February 1991	JP
4-9860	January 1992	JP
4-264453	September 1992	JP
5-2287	January 1993	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
5-66608	March 1993	JP
5-150539	June 1993	JP
5-346682	December 1993	JP
7-99422	April 1995	JP
7-209904	August 1995	JP
8-22191	January 1996	JP
2681791	August 1997	JP
2749122	May 1998	JP
2749234	May 1998	JP
63-250660	October 1998	JP
10-307421	November 1998	JP
10-307455	November 1998	JP
10-307456	November 1998	JP
10-307457	November 1998	JP
10-307458	November 1998	JP
11-38678	February 1999	JP
11-15206	July 1999	JP

ART-UNIT: 1756

PRIMARY-EXAMINER: Dote; Janis L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

A magnetic toner comprising magnetic toner particles containing at least a binder resin, a magnetic material containing a magnetic iron oxide, and a release agent. The magnetic toner has a weight-average particle diameter of from 3 .mu.m to 10 .mu.m, a magnetization intensity (saturation magnetization) of from 10 Am.sup.2 /kg to 50 Am.sup.2 /kg (emu/g) under application of a magnetic field of 79.6 kA/m (1,000 oersteds), an average circularity of 0.970 or more, a ratio of weight-average particle diameter to number-average particle diameter, of 1.40 or less, iron and an iron compound which stand liberated from the magnetic toner particles at a liberation percentage of from 0.05% to 3.00%, and a resin component having a tetrahydrofuran-insoluble matter in an amount of from 3% by weight to 60% by weight. Also disclosed is an image-forming method making use of the magnetic toner.

57 Claims, 6 Drawing figures

☐ 12. Document ID: US 20010028988 A1 Relevance Rank: 42

L27: Entry 9 of 15 File: PGPB Oct 11, 2001

PGPUB-DOCUMENT-NUMBER: 20010028988
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010028988 A1

TITLE: Magnetic toner and image-forming method making use of the same

PUBLICATION-DATE: October 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Magome, Michihisa	Shizuoka-ken		JP	
Kukimoto, Tsutomu	Yokohama-shi		JP	
Takiguchi, Tsuyoshi	Shizuoka-ken		JP	
Chiba, Tatsuhiko	Kamakura-shi		JP	
Hashimoto, Akira	Mishima-shi		JP	
Komoto, Keiji	Numazu-shi		JP	

APPL-NO: 09/ 788399 [PALM]
DATE FILED: February 21, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2000-043671	2000JP-2000-043671	February 21, 2000
JP	2000-086484	2000JP-2000-086484	March 27, 2000
JP	2000-086486	2000JP-2000-086486	March 27, 2000

JP 2000-399203 2000JP-2000-399203 December 27, 2000

INT-CL: [07] G03 G 9/083

US-CL-PUBLISHED: 430/106.1; 430/111.41, 430/110.3, 430/109.3, 430/109.4
US-CL-CURRENT: 430/106.1; 430/109.3, 430/109.4, 430/110.3, 430/111.41

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

A magnetic toner comprising magnetic toner particles containing at least a binder resin, a magnetic material containing a magnetic ion oxide, and a release agent. The magnetic toner has a weight-average particle diameter of from 3 .mu.m to 10 .mu.m, a magnetization intensity (saturation magnetization) of from 10 Am.sup.2/kg to 50 Am.sup.2/kg (emu/g) under application of a magnetic field of 79.6 kA/m (1,000 oersteds), an average circularity of 0.970 or more, a ratio of weight-average particle diameter to number-average particle diameter, of 1.40 or less, iron and an iron compound which stand liberated from the magnetic toner particles at a liberation percentage of from 0.05% to 3.00%, and a resin component having a tetrahydrofuran-insoluble matter in an amount of from 3% by weight to 60% by weight. Also disclosed is an image-forming method making use of the magnetic toner.

☐ 13. Document ID: US 5406360 A Relevance Rank: 41

L27: Entry 15 of 15 File: USPT Apr 11, 1995

US-PAT-NO: 5406360
DOCUMENT-IDENTIFIER: US 5406360 A
**** See image for Certificate of Correction ****

TITLE: Image forming apparatus with contact transfer member

DATE-ISSUED: April 11, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Asai; Jun	Tokyo			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 08/ 091200 [PALM]
DATE FILED: July 14, 1993

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE

JP 4-212158 July 16, 1992

INT-CL: [06] G03 G 15/00

US-CL-ISSUED: 355/274; 355/277
US-CL-CURRENT: 399/313

FIELD-OF-SEARCH: 355/271, 355/274, 355/277, 355/278, 355/279, 355/280, 355/281

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4380385	April 1983	Ozaki et al.	355/277
4719489	January 1988	Ohkubo et al.	355/290
4910558	March 1990	Giezeman et al.	355/279
5038178	August 1991	Hosoya et al.	355/277
5159393	October 1992	Hiroshima et al.	355/277
5172172	December 1992	Amemiya et al.	355/271
5182604	January 1993	Asai	355/273
5233395	August 1993	Kohyama	355/274

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0073071	June 1980	JP	355/274
0247378	October 1987	JP	355/274
0177063	July 1989	JP	355/280
0013170	January 1992	JP	355/277

ART-UNIT: 215

PRIMARY-EXAMINER: Beatty; Robert B.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

The present invention provides an image forming apparatus with an image bearing member, an image forming device for forming a toner image on the image bearing member, and a transfer device adapted to transfer the toner image onto a transfer material at a transfer station and capable of contacting with a surface of the transfer material opposite to the image bearing member. A combined pressure force of the transfer material and transfer device against the image bearing member during a transferring operation is selected to be 0.2-8 grams per 1 cm in a longitudinal direction of the transfer device.

15 Claims, 14 Drawing figures

☐ 14. Document ID: US 6873816 B2 Relevance Rank: 41

L27: Entry 10 of 15 File: USPT Mar 29, 2005

US-PAT-NO: 6873816
DOCUMENT-IDENTIFIER: US 6873816 B2

TITLE: Developing assembly, process cartridge and image-forming method

DATE-ISSUED: March 29, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Akashi; Yasutaka	Kanagawa			JP
Goseki; Yasuhide	Kanagawa			JP
Shimamura; Masayoshi	Kanagawa			JP
Fujishima; Kenji	Kanagawa			JP
Saiki; Kazunori	Kanagawa			JP
Otake; Satoshi	Shizuoka			JP
Okamoto; Naoki	Shizuoka			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 10/ 219242 [PALM]
DATE FILED: August 16, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2001-248675	August 20, 2001

INT-CL: [07] G03 G 15/08

US-CL-ISSUED: 399/286
US-CL-CURRENT: 399/286

FIELD-OF-SEARCH: 399/286, 399/279, 399/280, 399/281, 399/282, 399/284, 399/285, 399/274, 399/276, 399/275, 430/12.2, 430/108.6, 430/110.4, 430/111.41

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
2297691	October 1942	Carlson	95/5

3666363	May 1972	Tanaka et al.	
4071361	January 1978	Marushima	96/1.4
4380966	April 1983	Isaka et al.	118/651
4664504	May 1987	Oda et al.	
4769676	September 1988	Mukai et al.	
4851960	July 1989	Nakamura et al.	361/225
4870461	September 1989	Watanabe et al.	
5175070	December 1992	Tanikawa et al.	430/122
5175586	December 1992	Goseki et al.	
5202731	April 1993	Tanikawa et al.	
5274426	December 1993	Goseki et al.	
5282007	January 1994	Oshiumi	
5283618	February 1994	Hosoya et al.	
5432037	July 1995	Nishikiori	430/126
5480755	January 1996	Uchiyama et al.	430/106.6
5618647	April 1997	Kukimoto et al.	430/106.6
5721433	February 1998	Kosaka	250/573
5849453	December 1998	Mikuriya et al.	430/125
5885743	March 1999	Takayanagi et al.	430/110
5912101	June 1999	Karaki et al.	430/110
5976755	November 1999	Yoshida et al.	430/126
6060202	May 2000	Ogawa et al.	430/111
6077635	June 2000	Okado et al.	430/45
6081681	June 2000	Nagase et al.	399/174
6104903	August 2000	Hara et al.	399/265
6115575	September 2000	Kinoshita et al.	399/286
6122473	September 2000	Goseki et al.	399/286
6128456	October 2000	Chigono et al.	399/176
6178306	January 2001	Mizoguchi et al.	399/276
6391511	May 2002	Okamoto et al.	430/120

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
1210283	March 1999	CN	
36-10231	July 1936	JP	
42-23910	November 1942	JP	
43-24748	October 1943	JP	
54-79043	June 1979	JP	
55-26526	February 1980	JP	
56-13945	April 1981	JP	
56-142540	November 1981	JP	
57-66455	April 1982	JP	
57-116372	July 1982	JP	
57-151952	September 1982	JP	
58-11974	January 1983	JP	

59-53856	March 1984	JP
59-61842	April 1984	JP
59-133573	July 1984	JP
59-168458	September 1984	JP
60-69660	April 1985	JP
61-141452	June 1986	JP
61-249059	November 1986	JP
61-275864	December 1986	JP
62-203182	September 1987	JP
62-258742	November 1987	JP
63-133179	June 1988	JP
63-149669	June 1988	JP
64-20587	January 1989	JP
1-131586	May 1989	JP
2-120865	May 1990	JP
2-302772	December 1990	JP
4-9860	January 1992	JP
4-264453	September 1992	JP
5-2287	January 1993	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
5-66608	March 1993	JP
5-150539	June 1993	JP
5-346682	December 1993	JP
7-99442	October 1995	JP
9-146293	June 1997	JP
10-83096	March 1998	JP
10-307421	November 1998	JP
10-307455	November 1998	JP
10-307456	November 1998	JP
10-307457	November 1998	JP
10-307458	November 1998	JP
2862827	December 1998	JP
11-15206	January 1999	JP
11-95479	April 1999	JP
11-174731	July 1999	JP
11-194530	July 1999	JP
11-202557	July 1999	JP

ART-UNIT: 2852

PRIMARY-EXAMINER: Ngo; Hoang

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

A developing assembly is disclosed having at least a developer container, a developer-carrying member and a developer layer thickness regulation member, wherein the developer is composed mainly of toner particles containing at least a binder resin and a colorant, and conductive fine particles, and the developer-carrying member has a substrate and a surface layer formed on the substrate of a non-magnetic metal, an alloy or a metallic compound. This developing assembly causes no sleeve ghost, enables electrostatic latent images to be faithfully developed, causes no fading phenomenon, and enables high-density images to be formed in every environment. Also disclosed are a process cartridge having the developing assembly and the latent-image-bearing member integrally set as one unit detachably mountable on the main body of an image-forming apparatus, and an image-forming method making use of the features of this developing assembly.

18 Claims, 13 Drawing figures

☐ 15. Document ID: US 20030123909 A1 Relevance Rank: 41

L27: Entry 8 of 15 File: PGPB Jul 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030123909
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030123909 A1

TITLE: Developing assembly, process cartridge and image-forming method

PUBLICATION-DATE: July 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Akashi, Yasutaka	Kanagawa		JP	
Goseki, Yasuhide	Kanagawa		JP	
Shimamura, Masayoshi	Kanagawa		JP	
Fujishima, Kenji	Kanagawa		JP	
Saiki, Kazunori	Kanagawa		JP	
Otake, Satoshi	Shizuoka		JP	
Okamoto, Naoki	Shizuoka		JP	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo		JP	03

APPL-NO: 10/ 219242 [PALM]
DATE FILED: August 16, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	248675/2001(PAT.)	2001JP-248675/2001(PAT.)	August 20, 2001

INT-CL: [07] G03 G 15/08

US-CL-PUBLISHED: 399/286; 430/124
US-CL-CURRENT: 399/286; 430/124

REPRESENTATIVE-FIGURES: 7

ABSTRACT:

A developing assembly is disclosed having at least a developer container, a developer-carrying member and a developer layer thickness regulation member, wherein the developer is composed mainly of toner particles containing at least a binder resin and a colorant, and conductive fine particles, and the developer-carrying member has a substrate and a surface layer formed on the substrate of a non-magnetic metal, an alloy or a metallic compound. This developing assembly causes no sleeve ghost, enables electrostatic latent images to be faithfully developed, causes no fading phenomenon, and enables high-density images to be formed in every environment. Also disclosed are a process cartridge having the developing assembly and the latent-image-bearing member integrally set as one unit detachably mountable on the main body of an image-forming apparatus, and an image-forming method making use of the features of this developing assembly.

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Term	Documents
ELASTIC	814443
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(26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15
(L26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15

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